AV-27F703
AV-27F713
AV-27F803

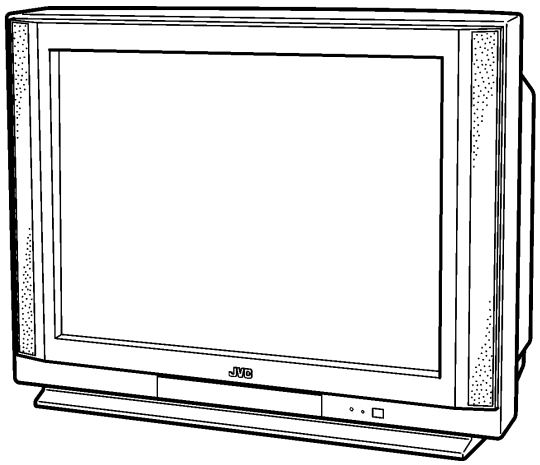
JVC

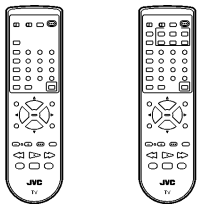
SERVICE MANUAL

COLOR TELEVISION

BASIC CHASSIS
GJ (No.A111)

AV-27F703/S
AV-27F713/S
AV-27F803/S





[RM-C326G]
RM-C326
AV-27F703
AV-27F713

[RM-C325G]
AV-27F803

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No.52005
Jun. 2002

AV-27F703
AV-27F713
AV-27F803

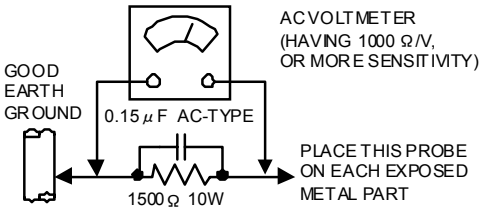
SPECIFICATIONS

Items			Contents
Dimensions (W × H × D)			29-7/8" × 23"-3/8" × 19-3/4" (758mm × 593mm × 500mm)
Mass			94.6 lbs (43.0 kg)
TV System and Color System		TV RF System	CCIR(M)
		Color System	NTSC
		Sound System	BTSC System (Multi-Channel Sound)
TV Receiving Channels and Frequency		VL Band	(02～06) 54MHz～88MHz
		VH Band	(07～13) 174MHz～216MHz
		UHF Band	(14～69) 470MHz～806MHz
CATV Receiving Channels and Frequency		Low Band	(02～06, A-8) by (02～06&01) (54MHz～804MHz)
		High Band	(07～13) by (07～13)
		Mid Band	(A～1) by (14～22)
		Super Band	(J～W) by (23～36)
		Hyper Band	(W+1～W+28) by (37～64)
		Ultra Band	(W+29～W+84) by (65～125)
		Sub Mid Band	(A8, A4～A1) by (01, 96～99)
		TV/CATV Total Channel	180 Channels
Intermediate Frequency		Video IF Carrier	45.75MHz
		Sound IF Carrier	41.25MHz (4.5MHz)
Color Sub Carrier			3.58MHz
Power Input			120V AC, 60Hz
Power Consumption			140W
Picture Tube			27" (68cm) Measured Diagonally
High Voltage			30.0kV±1.3kV (at zero beam current)
Speaker			2" × 4-3/4" (5 × 12cm) Oval type × 2
Audio Power Output			5W + 5W
Input terminals	Input 1 (Rear)	S-Video	Y : 1V(p-p) Positive (Negative sync provided, when terminated with 75Ω) C : 0.286V(p-p) (Burst signal, when terminated with 75Ω)
		Video	1V(p-p), 75Ω
		Audio (L/MONO, R)	500mV(rms) (-4dBs), High Impedance
	Input 2 (Rear)	Video	1Vp-p, 75Ω
		Component video	**Y** : 1V(p-p) Positive (Negative sync provided, when terminated with 75Ω) P_B, P_R : 0.7V(p-p), 75Ω
		Audio (L/MONO, R)	500mV(rms) (-4dBs), High Impedance
	Input 3 (Front)	Video	1V(p-p), 75Ω
		Audio (L/MONO, R)	500mV(rms) (-4dBs), High Impedance
	Input 4 (Rear) (For AV-27F803)		
		Component video	**Y** : 1V(p-p) Positive (Negative sync provided, when terminated with 75Ω) P_B, P_R : 0.7V(p-p), 75Ω
		Audio (L/MONO, R)	500mV(rms) (-4dBs), High Impedance
Fix Audio Output			500mV(rms), (-4dBs), LOW Impedance (400Hz when modulated 100%)
AV compulink Ⅲ Input			3.5mm mini jack
Antenna terminal			75Ω (VHF/UHF) Terminal, F-Type Connector
Remote Control Unit			RM-C326G(AV-27F703) / RM-C326(AV-27F713) /RM-C325G(AV-27F803) (AA/R6/UM-3 battery × 2)

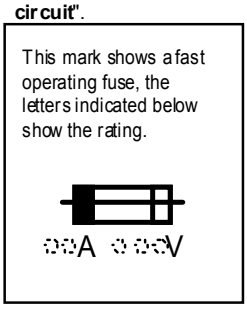
Design & specifications are subject to change without notice.

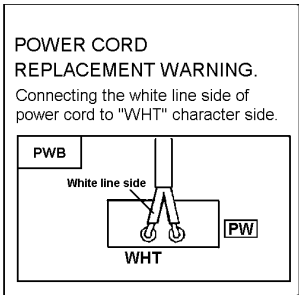
SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
8. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
    (1) **Dielectric Strength Test**
    The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
    (. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
    This method of test requires a test equipment not generally found in the service trade.
    (2) **Leakage Current Check**
    Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
    However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).
    ● **Alternate Check Method**
    Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
    However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



11. **High voltage hold down circuit check.**
    After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
    See item "**How to check the high voltage hold down circuit**".





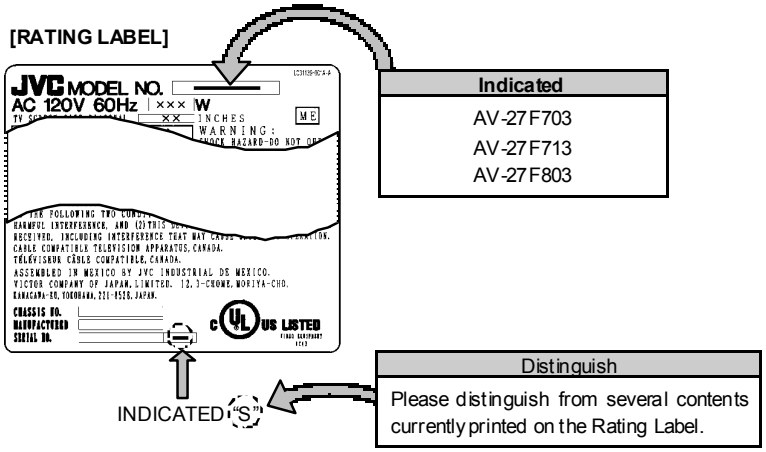
AV-27F703
AV-27F713
AV-27F803

FEATURES

- New chassis design enables use of a single board with simplified circuitry.
- Users can make fun to connect the DVD player with the component video signal input terminal.
- Provided with miniature tuner (TV/CATV).
- Multifunctional remote control permits picture adjustment.
- Adoption of the CHANNEL GUARD function prevents the specific channels from being selected, unless the "ID number" is key in.
- I^2C bus control utilizes single chip ICs.
- Adoption of the VIDEO STATUS / THEATER PRO. function.
- Adoption of the ON/OFF TIMER and SLEEP TIMER function.
- Built-in V-CHIP system.
- Closed-caption broadcasts can be viewed.
- Built-in MTS system, BBE / HYPER-SURROUND system.
- S-VIDEO input terminal for taking best advantage of Super VHS.
- Digital Comb filter Improved picture quality.
- Built-in EZ SURF system.(AV-27F803)
  By pushing the EZ SURF key, Back Program Information can be displayed in written from program Information uses a CALL LETTER (broadcasting station ID), a Network name and a Program name of XDS data, and collect's tuning of the tuner for PIP one by one.

HOW TO IDENTIFY MODELS

• How to recognize from the appearance of the model concerned is written below. Please distinguish from several contents currently printed on the rating label.



MAIN DIFFERENCE LIST

⚠	Model name / Parts Name	AV-27F703/S	AV-27F713/S	AV-27F803/S
	MAIN PWB	SGJ-1004A-M2	SGJ-1003A-M2	SGJ-1002A-M2
	PIP PWB	×	×	SGJ-4001A-M2
	AV SEL PWB	SGJ-5002A-M2	←	SGJ-5001A-M2
	3D Y/C SEP MODULE PWB	×	×	SGJ0Y001A-M2
⚠	FRONT CABI. ASSY	LC10878-003B-A	LC10878-004A-A	LC10878-003B-A
	JVC MARK	CM48006-008-C	CM48006-009-C	CM48006-008-C
⚠	DOOR	LC20628-001C-A	LC20628-002A-A	LC20628-001C-A
⚠	KNOB (POWER)	LC31237-001A-A	LC31237-002A-A	LC31237-001A-A
	OPERATION SHEET	LC31238-004A-A	LC31238-005A-A	LC31238-004A-A
⚠	CONTROL KNOB	LC20217-004B-A	LC20217-006A-A	LC20217-004B-A
⚠	TERMINAL BOARD	LC20899-004A-A	LC20899-004A-A	LC20899-005A-A
	REMOCON UNIT	RM-C326G-1A	RM-C326-1A	RM-C325G-1A
	INPUT TERMINAL	INPUT1～INPUT3	←	INPUT1～INPUT4

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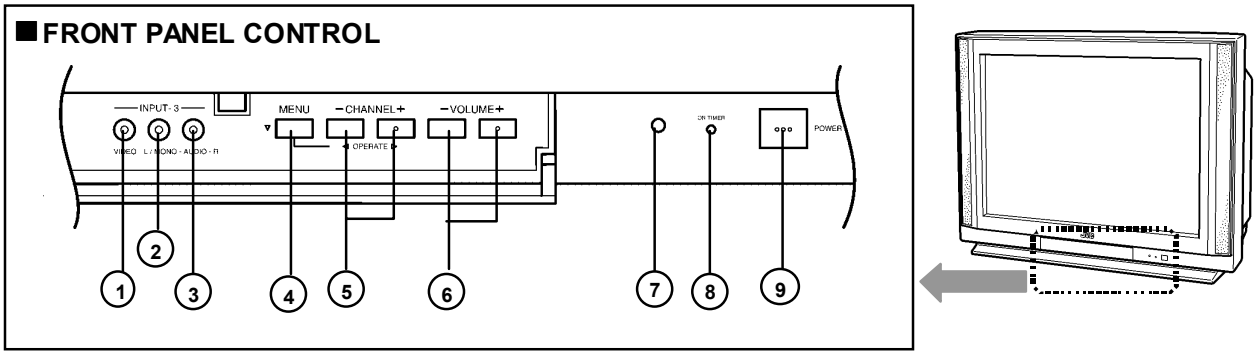
FUNCTIONS

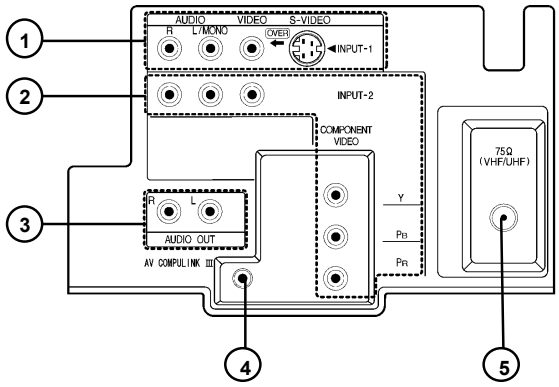
■FRONT PANEL CONTROL



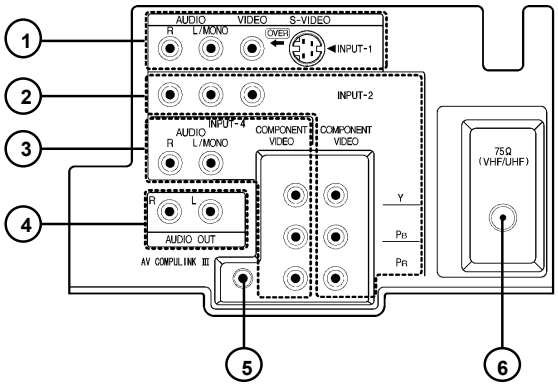
① INPUT3 VIDEO terminal	⑥ VOLUME **-/+** buttons
② INPUT3 AUDIO L / MONO terminal	⑦ SENSOR REMOTE CONTROL
③ INPUT3 AUDIO R terminal	⑧ ON TIMER LED
④ MENU button (▼)	⑨ POWER button
⑤ CHANNEL -/+ buttons OPERATE ◀/▶ buttons (use MENU screen)	

■REAR TERMINAL

[AV-27F703/S, AV-27F713/S]



[AV-27F803/S]



[AV-27F703/S, AV-27F713/S]

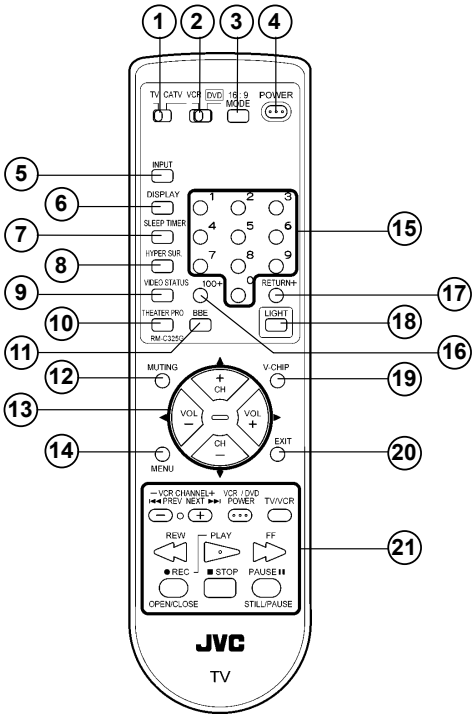
① INPUT 1 (S-VIDEO, V, L/MONO, R) terminals
② INPUT 2 (V, L / MONO, R) terminals / COMPONENT VIDEO(Y, P_B, P_R) terminals
③ AUDIO OUT(L, R) terminals
④ AV COMPULINK Ⅲ
⑤ VHF / UHF terminal

[AV-27F803/S]

① INPUT 1 (S-VIDEO, V, L/MONO, R) terminals
② INPUT 2 (V, L / MONO, R) terminals / COMPONENT VIDEO(Y, P_B, P_R) terminals
③ INPUT 4 (L, R) terminals / COMPONENT VIDEO(Y, P_B, P_R) terminals
④ AUDIO OUT(L, R) terminals
⑤ AV COMPULINK Ⅲ
⑥ VHF / UHF terminal

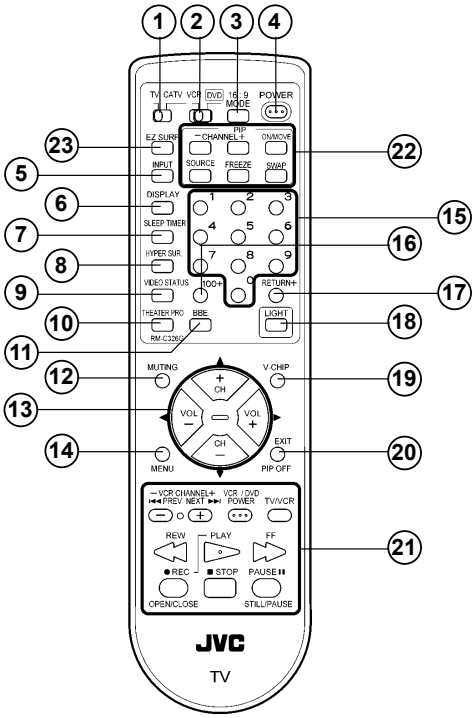
■REMOTE CONTROL UNIT

[RM-C326G : AV-27F703/S
RM-C326 : AV-27F713/S]



① TV / CATV switch
② VCR / DVD switch
③ 16 : 9 MODE Key
④ POWER Key
⑤ INPUT Key (TV → VIDEO1 → VIDEO2 → VIDEO3)
⑥ DISPLAY Key
⑦ SLEEP TIMER Key (0 → 15 → 30 ·····165 → 180)
⑧ HYPER SUR. Key (Can be changed ON / OFF)
⑨ VIDEO STATUS Key
⑩ THEATER PRO key
⑪ BBE key (Can be changed ON / OFF)
⑫ MUTING Key
⑬ FUNCTION Key (CH -/+ / VOL -/+) The FUNCTION keys operate CHANNEL and VOLUME normally. These keys are also used to navigate MENU system.
⑭ MENU Key
⑮ NUMBERS Key
⑯ 100+ Key
⑰ RETURN+ Key
⑱ LIGHT Key
⑲ V-CHIP Key
⑳ EXIT Key
㉑ VCR / DVD Keys

[RM-C325G : AV-27F803/S]



① TV / CATV switch
② VCR / DVD switch
③ 16 : 9 MODE Key
④ POWER Key
⑤ INPUT Key(TV → VIDEO1 → VIDEO2 → VIDEO3 → VIDEO4)
⑥ DISPLAY key
⑦ SLEEP TIMER Key (0 → 15 → 30 ·····165 → 180)
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⑭ MENU Key
⑮ NUMBERS Key
⑯ 100+ Key
⑰ RETURN+ Key
⑱ LIGHT Key
⑲ V-CHIP Key
⑳ EXIT / PIP OFF Key
㉑ VCR / DVD Keys
㉒ PIP Key
㉓ EZ SURF Key (Back Program Information can be displayed.)

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SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Disconnect the power plug from wall outlet.
2. As shown in the Fig.1, remove the **12** screws marked Ⓐ .
3. Withdraw the rear cover backward.

REMOVING THE TERMINAL BOARD

● After removing the rear cover.

1. As shown in Fig.1, remove the screws marked Ⓑ .
2. Withdraw the terminal board toward you.

REMOVING THE CHASSIS

● After removing the rear cover / terminal board.

1. Slightly raise the both sides of chassis by hand and remove the 2 claws under the both side of the chassis from the front cabinet.
2. Withdraw the chassis backward.
   (If necessary, remove the wire clamp, connectors etc.)

REMOVING THE SPEAKER

● After removing the rear cover.

1. As shown in Fig. 1, removing the **4** screws marked Ⓒ , then remove the speaker.
2. Follow the same steps when removing the other hand speaker.

NOTE : When removing the **4** screws marked Ⓒ of the speaker, remove the lower side screw first, and then remove the upper one.

REMOVING THE LED & POWER SW PWB

● After removing the rear cover & terminal board.

1. Remove the **2** screws marked Ⓓ as shown in Fig.1.
2. Withdraw the LED & POWER SW PWB toward you.

∗ If necessary, remove the wire clamp, connector etc.

REMOVING THE FRONT CONTROL PWB

● After removing the rear cover & terminal board.

1. Remove the **2** screws marked Ⓔ as shown in Fig.1.
2. Withdraw the FRONT CONTROL PWB toward you.

∗ If necessary, remove the wire clamp, connector etc.

CHECKING THE CHASSIS

To check the PW Board from back side.

1. Pull out the chassis (refer to REMOVING THE CHASSIS).
2. Erect the chassis vertically so that you can easily check the back side of the PW Board.

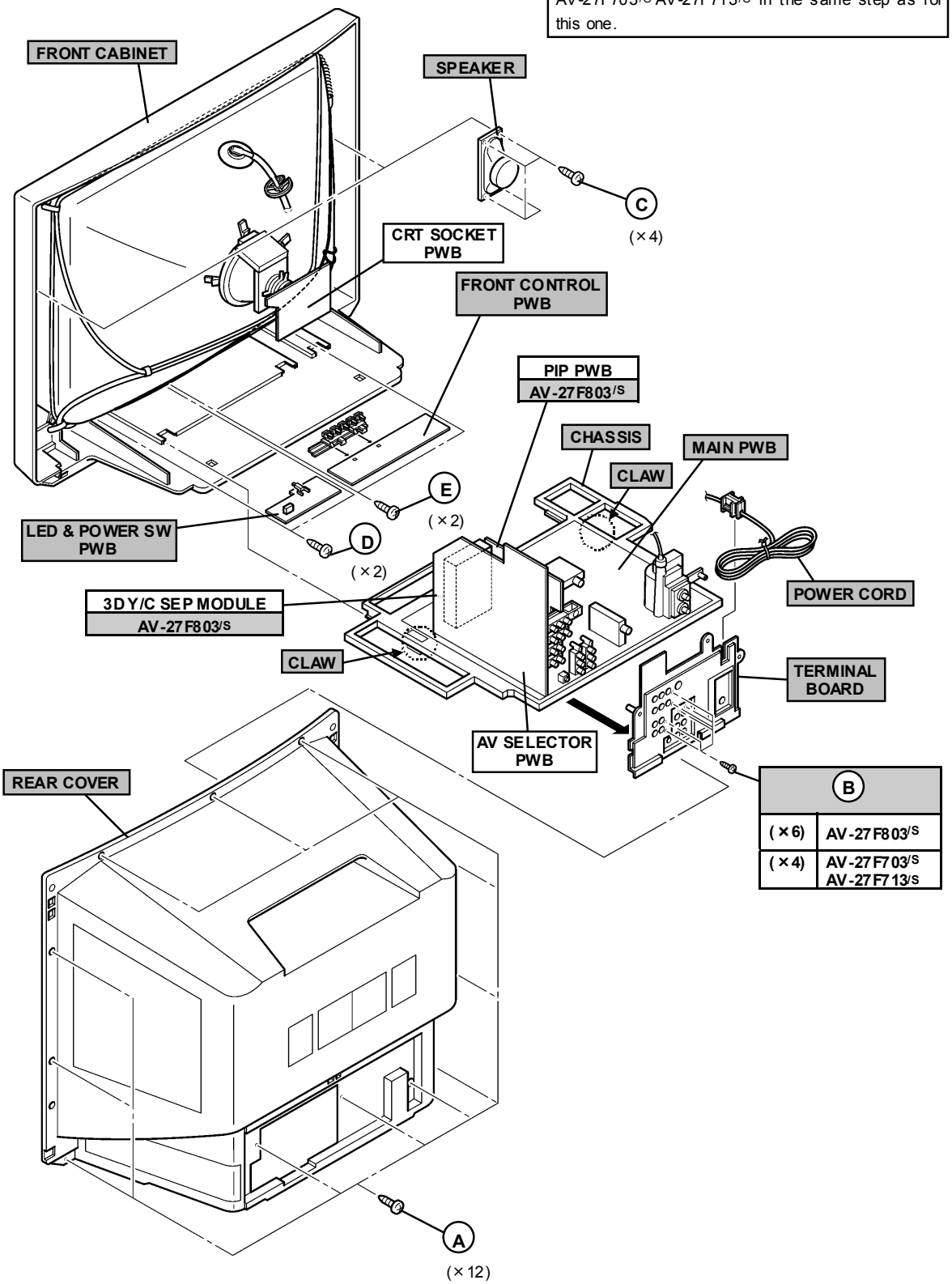
[CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- **When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.**

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together.
   Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

This exploded view describes about the AV-27F803/S. You can use the exploded view for disassembling the AV-27F703/S AV-27F713/S in the same step as for this one.



B	
(×6)	AV-27F803/S
(×4)	AV-27F703/S AV-27F713/S

Fig.1

AV-27F703
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MEMORY IC REPLACEMENT

1. Memory IC

This TV uses memory IC.
This memory IC stores data for proper operation of the video and deflection circuits.
When replacing the memory IC, be sure to use an IC containing this (initial value) data.

2. Memory IC replacement procedure

(1) Power off

Switch off the power and disconnect the power cord from the wall outlet.

(2) Replace the memory IC

Be sure to use a memory IC written with the initial setting data.

(3) Power on

Connect the power cord to the wall outlet and switch on the power.

(4) Confirm the system constant value

- 12.SYSTEM (SYS) do not adjust normally.
- The adjustment should not be done without signal.

■ **How to enter the SERVICE MENU.**

1) Press the **SLEEP TIMER** key and set **SLEEP TIMER** for 「**0 min**」.
2) Before disappear the display of **SLEEP TIMER** settings, simultaneously press the **DISPLAY** key and **VIDEO STATUS** key of the remote control unit.
3) The SERVICE MENU screen will be displayed as shown Fig.1.

■ **How to enter the 12. SYSTEM(SYS).**

1) While the SERVICE MENU is displayed, select the **12.SYSTEM(SYS)** item with FUNCTION (▼/▲) keys, and the FUNCTION (◀/▶) keys is pressed, the screen will be displayed as shown in Fig.2.
5) Refer to the SYSTEM (SYSTEM CONSTANT) TABLE 1 and check the setting items. If the value is different, select the setting item with the FUNCTION (▼/▲) keys and adjust the setting with the FUNCTION(◀/▶) keys. (The letters of the selected item are displayed in yellow.)
6) When adjustment has completed, the values store into memory IC automatically
7) Press the EXIT key to return the SERVICE MENU screen.
8) Then press the EXIT key again to return the normal screen.

(5) Receive the channel setting

Refer to the OPERATING INSTRUCTIONS (USER'S GUIDE) and set the receive channels (Channels Preset) as described.

(6) User settings

Check the user setting items according to TABLE 2.
Where these do not agree, refer to the OPERATING INSTRUCTIONS (USER'S GUIDE) and set the items as described.

(7) SERVICE MENU setting

Verify what to set in the SERVICE MENU, and set whatever is necessary(Fig.1) .
Refer to the SERVICE ADJUSTMENT for setting.

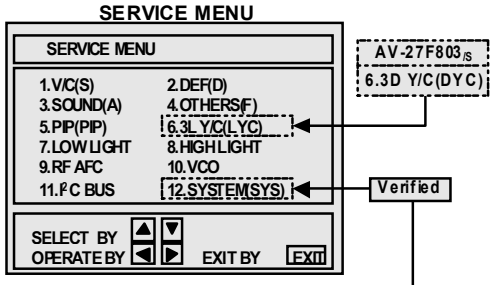


Fig.1

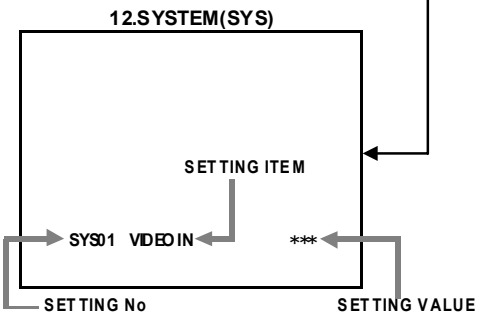
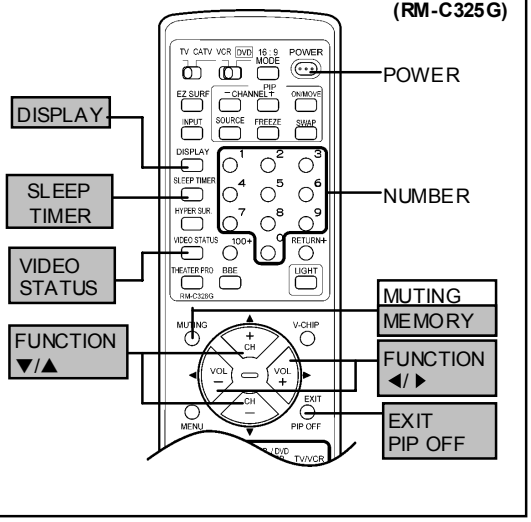


Fig.2

KEY ASSIGNMENT OF REMOTE CONTROL UNIT

(RM-C325G)



NOTE Although design is different, each remote controller has the same control function.

12. SYSTEM(SYS) 【System Constant setting】

No.	Setting item	Initial setting value		No.	Setting item	Initial setting value	
		AV-27F803/S	AV-27F703/S AV-27F713/S			AV-27F803/S	AV-27F703/S AV-27F713/S
SYS01	VIDEO IN	**04**	**03**	SYS13	HYP SURR	**01**	**01**
SYS02	PIP	**01**	**00**	SYS14	16:9 MD	**01**	**01**
SYS03	3D Y/C	**01**	**00**	SYS15	HYP SCAN	**01**	**01**
SYS04	Y CV	**01**	**01**	SYS16	EZ SURF	**01**	**00**
SYS05	CCD PCHK	**01**	**01**	SYS17	ID DISP	**01**	**01**
SYS06	PURITY	**00**	**00**	SYS18	COMPULINK	**01**	**01**
SYS07	VM	**01**	**01**	SYS19	CCD	**01**	**01**
SYS08	NOISE CR	**01**	**00**	SYS20	VCHIP	**01**	**01**
SYS09	CLR TEMP	**01**	**01**	SYS21	VCHIP CA	**01**	**01**
SYS10	THEATER	**01**	**01**	SYS22	JVC LOGO	**01**	**01**
SYS11	THEATER PRO	**01**	**01**	SYS23	CMP IN	**01**	**01**
SYS12	BBE	**01**	**01**	SYS24	CXA1875	**00**	**00**

Table 1

User setting

Setting item	Setting value	Setting item	Setting value
Use remote controller keys			
POWER	OFF	DISPLAY	OFF
CHANNEL	Cable-02	VIDEO STATUS	DYNAMIC
VOLUME	10	HYPER SURROUND	OFF
TV/VIDEO	TV	BBE	ON
		PIP SOURCE	Cable-04 (AV-27F803/S)
Settings of MENU			
PICTURE MENU		**INITIAL SETUP MENU**	
STANDARD		LANGUAGE	ENG
TINT	CENTER	FRONT PANEL LOCK	OFF
COLOR	CENTER	V2 COMPONENT-IN	NO
PICTURE	CENTER+14	AUTO SHUT OFF	OFF
BRIGHT	CENTER	CLOSED CAPTION	OFF (CC1 / T1)
DETAIL	CENTER / +14 (AV-27F803/S) +10 (AV-27F703/S / AV-27F713/S)	AUTO TUNER SET UP	Unnecessary to set
COLOR TEMPERATURE	LOW	CHANNEL SUMMARY	Setting Channel Guard channel : All OFF
NOISE MUTING	ON	V-CHIP	OFF
SOUND ADJUST MENU		SET LOCK CODE	(0000) Unnecessary to set
BASS	CENTER	XDS ID	ON
TREBLE	CENTER		
BALANCE	CENTER		
MTS	STEREO		
CLOCK / TIMERS MENU			
SET CLOCK	MANUAL		
	TIME ZONE : PACIFIC		
	D.S.T. : OFF		
ON / OFF TIMER	OFF		

Table 2

AV-27F703
AV-27F713
AV-27F803

SERVICE ADJUSTMENTS

ADJUSTMENT PREPARATION

1. **You can make the necessary adjustments for this unit with either the Remote Control Unit or with the adjustment tools and parts as given below.**
2. **Adjustment with the Remote Control Unit is made on the basis of the initial setting values, however, the new setting values which set the screen to its optimum condition may differ from the initial settings.**
3. Make sure that AC power is turned on correctly.
4. Turn on the power for set and test equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. **Never touch any adjustment part** which are not specified in the list for this adjustment - variable resistors, transformers, initial setting value, etc.
7. Presetting before adjustment.
   Unless otherwise specified in the adjustment instructions, preset the following functions with the remote control unit:

User menu preset value

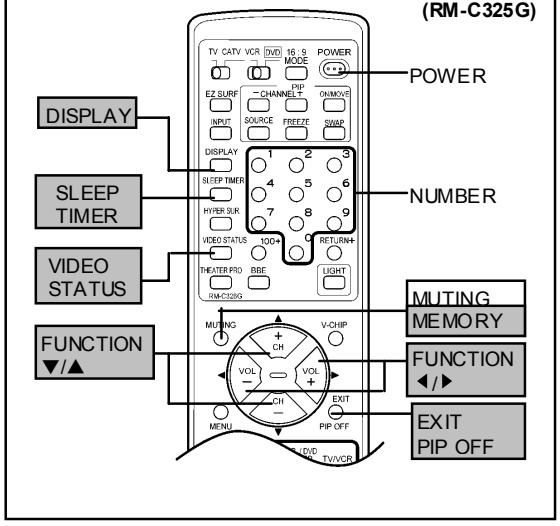
MENU ITEM	PRESET
VIDEO STATUS	STANDARD
BASS, TREBLE, BALANCE	CENTER
HYPER SURROUND	OFF
TINT, COLOR, PICTURE, BRIGHT, DETAIL	CENTER
MTS	STEREO

ADJUSTMENT EQUIPMENT

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [NTSC]
4. Remote control unit
5. TV audio multiplex signal generator.
6. Frequency counter

KEY ASSIGNMENT OF REMOTE CONTROL UNIT

(RM-C325G)

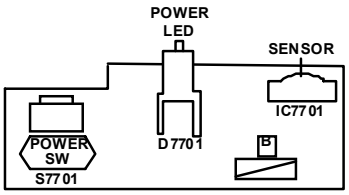


ADJUSTMENT ITEMS

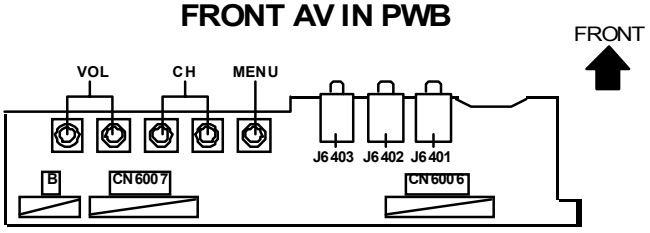
● CHECK OF B1 POWER SUPPLY	● ADJUSTMENT OF VIDEO / CHROMA CIRCUIT
● ADJUSTMENT OF VCO	WHITE BALANCE(High Light & Low Light) adjustment
MAIN VCO adjustment	PIP WHITE BALANCE (High Light) adjustment
SUB VCO adjustment	SUB BRIGHT adjustment
RF. AGC adjustment	SUB CONTRAST adjustment
● FOCUS adjustment	SUB COLOR adjustment
● ADJUSTMENT DEF CIRCUIT	SUB TINT adjustment
V. HEIGHT / V. CENTER(4:3) adjustment	● ADJUSTMENT OF MTS CIRCUIT
V. HEIGHT / L. LIN(16:9) adjustment	MTS INPUT LEVEL adjustment
H. POSI, H. SIZE & SIDE PIN [(4:3) &(16:9)] adjustment	MTS SEPARATION adjustment
PIP DISPLAY POSI adjustment	● HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

ADJUSTMENT LOCATIONS

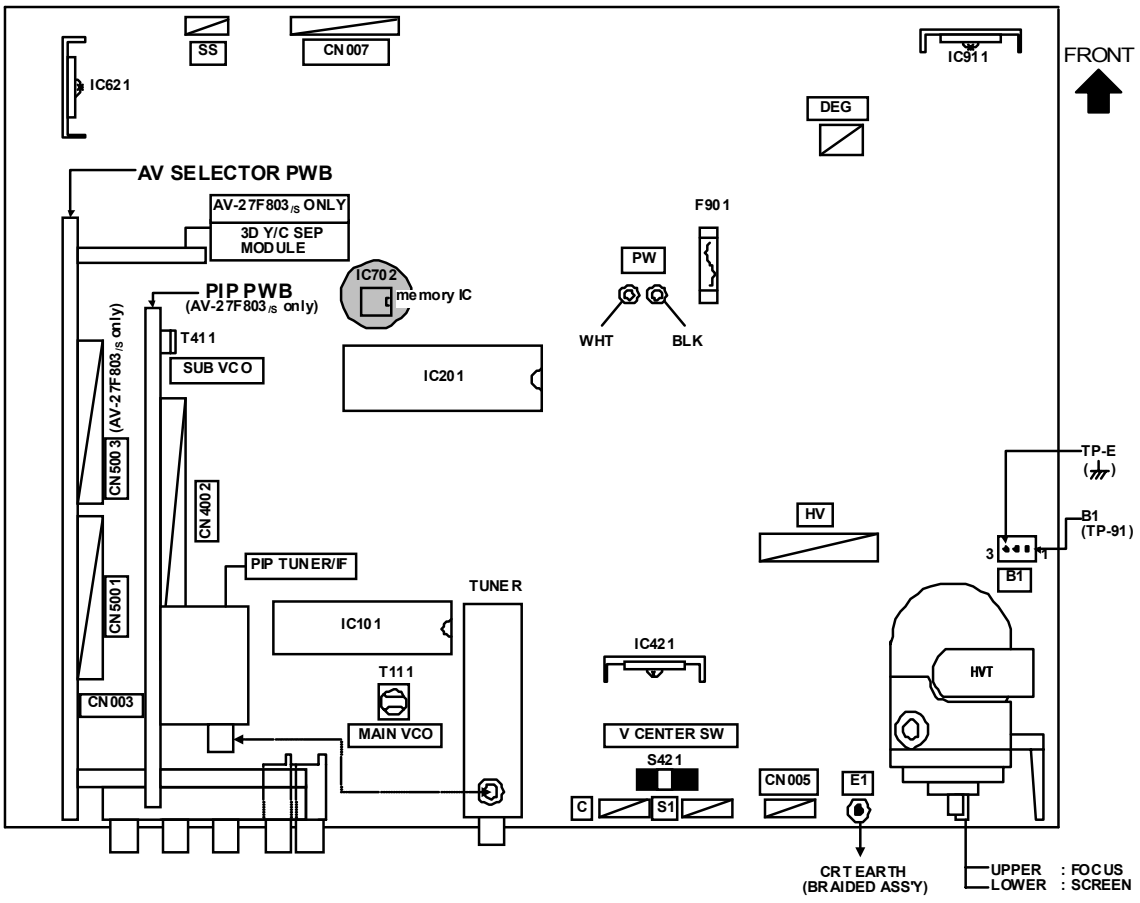
LED & PW SW PWB



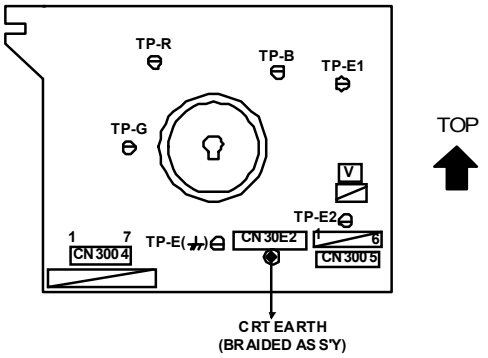
FRONT AV IN PWB



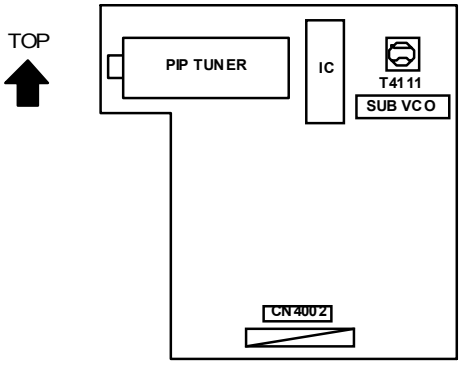
MAIN PWB



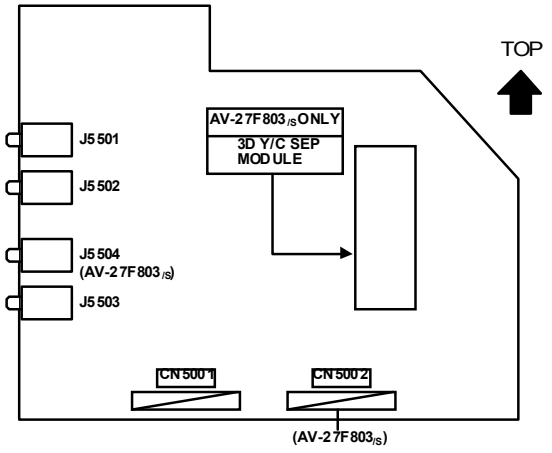
CRT SOCKET PWB



PIP PWB(AV-27F803/S)



AV SELECTOR PWB



BASIC OPERATION OF SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION
Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. In general, basic setting (adjustments) items or verifications are performed in the SERVICE MENU.
(1) V/C (S) ····· This set the setting values (adjustment values) of the VIDEO/CHROMA circuits.
(2) DEF (D) ····· This set the setting values (adjustment values) of the DEFLECTION circuit.
(3) SOUND (A) ····· This set the setting values (adjustment values) of the AUDIO circuit.
(4) OTHERS (F) ····· This is used when the OTHERS MODE is verified. **[Do not adjust]**
(5) PIP (PIP) ····· This set the setting values(adjustment values) of the PICTURE-IN-PICTURE circuit. (PIP is means as Picture In Picture) **[AV-27F803/S]**
(6) 3LY/C(LYC) / 3DY/C(DYC) ····· This is used when the 3L(or 3D) Y/C MODE is verified. **[Do not adjust]**
[3L Y/C(LYC) =AV-27F703/S, AV-27F713/S / 3D Y/C(DYC)=AV-27F803/S]
(7) LOW LIGHT ····· This sets the setting values (adjustment values) of the WHITE BALANCE circuit.
(8) HIGH LIGHT ····· This sets the setting values (adjustment values) of the WHITE BALANCE circuit
(9) RF AFC ····· This is used when the RF AFC MODE is verified. **[Do not adjust]**
(10)VCO ····· This is used when the IF VCO is adjusted.
(11)I²C BUS ····· This is used when ON/OFF of the I²C BUS CTRL is set. **[Fixed ON]**
(12)SYSTEM (SYS) ····· This is used when the SYSTEM is verified. **[Fixed value]**

3. Basic Operations of the SERVICE MENU
(1) How to enter the SERVICE MENU.
Press the **SLEEP TIMER** key and set the **SLEEP TIMER** for 「**0** MIN」.
Then press the **DISPLAY** key and **VIDEO STATUS** key of the remote control unit at the same time to enter the SERVICE MENU screen.(FIG.1)

(2) SERVICE MENU screen selection
In SERVICE MENU, press the FUNCTION (▼/▲) key to select any of the SUB MENU items.
(The letters of the selected items are displayed in yellow.)

SERVICE MENU

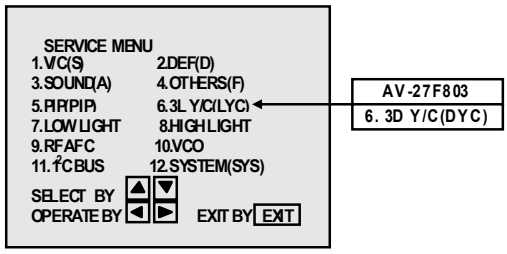


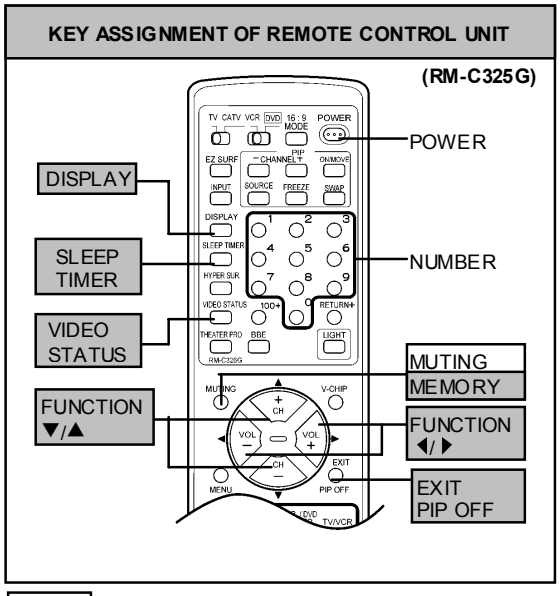
Fig.1

(3) Enter the any setting (adjustment) mode
- **1. V/C(S), 2. DEF(D), 3. SOUND(A), 4. OTHERS(F), 5. PIP(PIP), 6. 3L Y/C(LYC)** [AV-27F703/S / AV-27F713/S] **/ 3D Y/C(DYC)** [AV-27F803/S]**, 7. LOW LIGHT, 8. HIGH LIGHT, 9. RF AFC, 10. VCO, 11. I²C BUS** and **12. SYSTEM(SYS)** mode.

1) If select any of **1. V/C(S) / 2. DEF(D) / 3. SOUND(A) / 4. OTHERS(F) / 5. PIP(PIP) / 6. 3L Y/C(LYC)** [AV-27F703/S / AV-27F713/S] **, 3D Y/C(DYC)** [AV-27F803/S] **/ 7. LOW LIGHT / 8. HIGH LIGHT / 9. RF AFC / 10. VCO / 11. I²C BUS / 12. SYSTEM(SYS)** items, and the FUNCTION (◀/▶) key is pressed from SERVICE MENU (MAIN MENU), the each screens will be displayed as shown in figure page later.
2) Then the settings or verifications can be performed

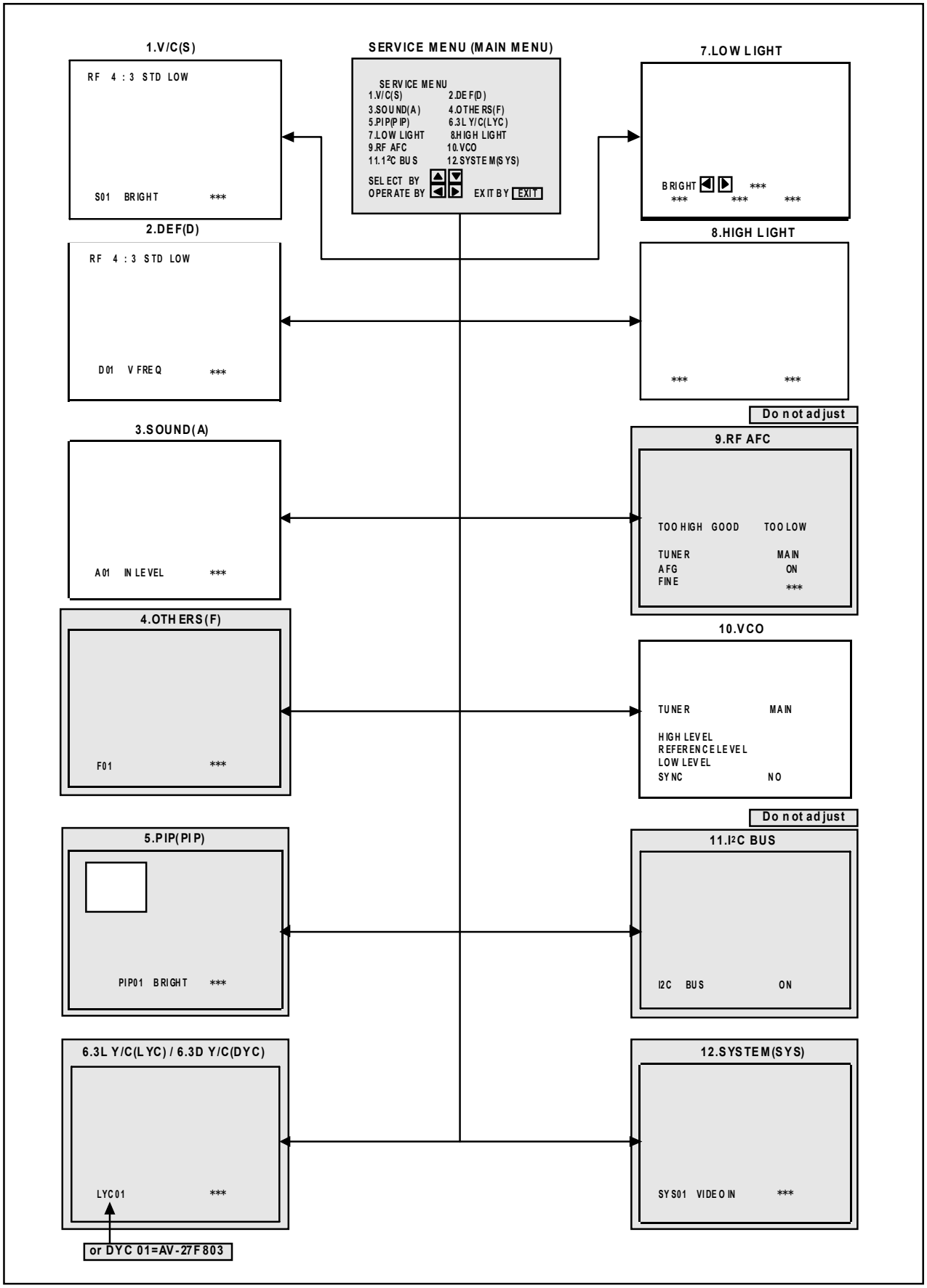
KEY ASSIGNMENT OF REMOTE CONTROL UNIT

(RM-C325G)



NOTE Although design is different, each remote controller has the same control function.

AV-27F703
AV-27F713
AV-27F803

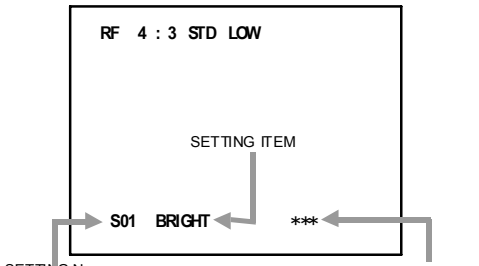


(4) Setting method

1) FUNCTION (▼/▲) key.
Select the SETTING ITEM.

2) FUNCTION (◀/▶) key
Setting (adjust) the SETTING VALUE of the SETTING ITEM.
When the key is released the SETTING VALUE will be stored (memorized).

3) EXIT key
Returns to the previous screen.



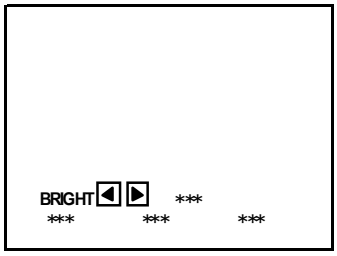
1.V/C (S)

(5) Releasing SERVICE MENU

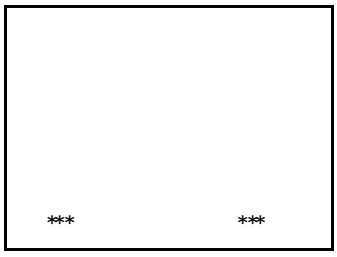
1) After returning to the SERVICE MENU upon completion of the setting (adjustment) work, press the EXIT key again.

★ The settings for LOW LIGHT and HIGH LIGHT are described in the WHITE BALANCE page of ADJUSTMENT.

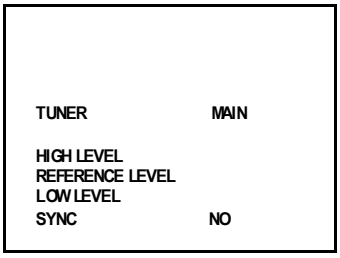
★ The setting for MAIN VCO are described in the VCO page of ADJUSTMENT.



7.LOW LIGHT



8.HIGH LIGHT



10.VCO

AV-27F703
AV-27F713
AV-27F803

INITIAL SETTING VALUE OF SERVICE MENU

1. Adjustment of the SERVICE MENU is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.
2. Do not change the initial setting values of the setting (adjustment) items not listed in "ADJUSTMENT".

● V / C MODE

-- can not be adjustment

No.	Setting item	RF						STANDARD(4:3)			
		AV-27F803/S			AV-27F703/S,AV-27F713/S			EXTERNAL (S,CV)		COMPONENT	
		STD(4:3)	STD(16:9)	THEATER (4:3)	STD(4:3)	STD(16:9)	THEATER (4:3)	AV-27F803/S	AV-27F703/S AV-27F713/S	AV-27F803/S	AV-27F703/S AV-27F713/S
S01	BRIGHT	64	--	--	64	--	--	--	--	--	--
S02	PICTURE	60	--	--	60	--	--	--	--	--	--
S03	COLOR	50	--	--	50	--	--	--	--	46	46
S04	TINT	68	--	--	68	--	--	--	--	72	72
S05	DETAIL	38	--	--	33	--	--	40	35	45	40
S06	BRIGHT +-	--	±00	+01	--	±00	+01	-01	-02	±00	±00
S07	PICT+-	--	-08	-10	--	-08	-10	±00	±00	±00	±00
S08	COLOR+-	--	±00	-03	--	±00	-03	-02	-02	--	--
S09	TINT+-	--	±00	-03	--	±00	-03	+11	+05	--	--
S10	DETAIL+-	--	--	±00	--	--	±00	--	--	--	--

No.	Setting item	Initial setting value							
		RF/EXT (S,CV)				COMPONENT			
		STANDARD		THEATER		STANDARD		THEATER	
		LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
S11	R CUT OFF	30	--	--	--	--	--	--	--
S12	G CUT OFF	30	--	--	--	--	--	--	--
S13	B CUT OFF	30	--	--	--	--	--	--	--
S14	R DRIVE	64	--	--	--	--	--	--	--
S15	B DRIVE	64	--	--	--	--	--	--	--
S16	R CUT+-	--	±00	±00	±00	-10	--	--	--
S17	G CUT+-	--	±00	±00	±00	±00	--	--	--
S18	B CUT+-	--	±00	±00	±00	-10	--	--	--
S19	R DRV+-	--	+05	+13	+07	±00	--	--	--
S20	B DRV+-	--	+06	-25	-09	±00	--	--	--
S21	NTSC MAT	03	03	01	01	02	02	01	01
S22	BLACK ST	02	--	02	--	--	--	--	--
S23	DCREST	01	--	01	--	--	--	--	--
S24	DCRSW	01	--	01	--	--	--	--	--

No.	Setting item	Initial setting value		
		RF	EXTERNAL	COMPONENT
S25	ASY SHRP	04	04	04
S26	BPF FO	00	00	--
S27	KILR OFF	00	00	--
S28	KILR SEN	01	01	--

No.	Setting item	Initial setting value	No.	Setting item	Initial setting value
S29	RGB MUTE	00	S39	Y MUTE	00
S30	BLUE B	00	S40	SVM GAIN	03
S31	VIDEO SW	03	S41	SVM PH	01
S32	CMP ABCL	00	S42	WPL	00
S33	OSD ABCL	00	S43	COL GMM	00
S34	OSD CONT	07	S44	V1 GAIN	04
S35	SUB CONT	05	S45	AGC ADJ	63
S36	ABL GAIN	00	S46	VMOFF DE	+03
S37	ABL PNT	03	S47	APC CLK	01
S38	Y GAMMA	01			

-- can not be adjustment

- **DEF MODE**

No.	Setting item	Initial setting value AV-27F803/S,AV-27F703/S AV-27F713/S			No.	Setting item	Initial setting value AV-27F803/S,AV-27F703/S AV-27F713/S		
		RF (4:3)	RF (16:9)	EXT (4:3)			RF (4:3)	RF (16:9)	EXT (4:3)
D01	V FREQ	00	00	03	D18	WVMT BTM	00	01	00
D02	AFC GAIN	00	00	02	D19	EWCR TOP	12	--	12
D03	H POSI	20	--	20	D20	EWCR T+-	--	00	--
D04	H POSI+-	--	00	--	D21	EWCR BTM	14	--	14
D05	V PHASE	00	--	00	D22	EWCR B+-	--	00	--
D06	V PH+-	--	00	--	D23	EW PARA	36	--	36
D07	V SIZE	75	--	75	D24	EW PARA+-	--	-15	--
D08	V SIZE+-	--	-30	--	D25	V EHT	00	--	00
D09	V CENTER	32	--	32	D26	V EHT+-	--	00	--
D10	V CENT+-	--	00	--	D27	H EHT	00	--	00
D11	V S CORR	09	--	09	D28	H EHT+-	--	00	--
D12	V S CO+-	--	00	--	D29	TRAPEZ	31	--	31
D13	V LIN	10	--	10	D30	TRAPEZ+-	--	00	--
D14	V LIN+-	--	00	--	D31	V AGC	00	00	00
D15	H SIZE	33	--	33	D32	BLANK SW	00	00	00
D16	H SIZE+-	--	00	--	D33	VRMP BI	00	00	00
D17	WVMT TOP	00	01	00					

- **SOUND MODE**

No.	Setting item	Initial setting value
A01	IN LEVEL	10
A02	LOW SEP	32
A03	HI SEP	32
A04	SAPC	00
A05	BBE BASS	±00
A06	BBE TRE	-03

AV-27F703
AV-27F713
AV-27F803

- **OTHERS MODE (Do not adjust)**

Setting item do not display

No.	Setting item	Initial setting value		No.	Setting item	Initial setting value	
		AV-27F803/S	AV-27F703/S AV-27F713/S			AV-27F803/S	AV-27F703/S AV-27F713/S
F01	OSD POSI	37	37	F15	VCSN 1	00	00
F02	OSD PREQ	90	90	F16	VCSN 2	10	10
F03	CCD POSI	39	39	F17	VCSN 3	20	20
F04	CCD FREQ	91	91	F18	VCSN STP	02	02
F05	CCD CONT	04	04	F19	VN DAT A	+08	+08
F06	PUR WBCK	00	00	F20	VM DAT B	-08	-08
F07	PUR CONT	02	02	F21	VM DAT C	-20	-20
F08	SN TYPE	01	02	F22	VM DAT D	-32	-32
F09	YCSN TM	05	05	F23	VM DAT E	01	01
F10	YCSN E	05	05	F24	VMOFF TY	02	02
F11	YCSN F	16	16	F25	YC VMOFF	255	255
F12	YCSN G	32	32	F26	EZSF TM	40	40
F13	VNR CHK	03	03	F27	XDSID TM	15	15
F14	VCSN TM	05	05	F28	FM TRAP	01	01

- **3L Y / C MODE (Do not adjust)**

No.	Setting item	Initial setting value
		AV-27F703/S,AV-27F713/S
LYC01	MODE	04
LYC02	VENH	01
LYC03	PDSOFF	00
LYC04	CB	00
LYC05	VNLR	02
LYC06	GSEL0	00
LYC07	GSEL1	01
LYC08	COR	00
LYC09	TRAP	01
LYC10	CHTRAP	00
LYC11	CBPF	00
LYC12	ENHOFF	00

- **3DY / C MODE [AV-27F803/S]**

No.	Setting item	Initial setting value	No.	Setting item	Initial setting value
DYC01	D7-0	21	DYC15	D7-0	09
DYC02	D7-4	00	DYC16	D7-0	241
DYC03	D1-0	00	DYC17	D7-0	37
DYC04	D7-0	193	DYC18	D7-0	08
DYC05	D7-3	04	DYC19	D7-0	68
DYC06	RF CDL	02	DYC20	D7-0	48
DYC07	EXT CDL	02	DYC21	D7-0	08
DYC08	D7-0	42	DYC22	D7-0	51
DYC09	D7-0	36	DYC23	D7-0	200
DYC10	D7-0	34	DYC24	D7-0	74
DYC11	D7-0	01	DYC25	D7-0	236
DYC12	D5-0	22	DYC26	D7-0	00
DYC13	D7-0	00	DYC27	D7-0	00
DYC14	D7-0	15	DYC28	3DYC	01

- **PIP MODE (Do not adjust)[AV-27F803/S]**

No.	Setting item	Initial setting value	No.	Setting item	Initial setting value
PIP01	BRIGHT	**00**	PIP27	UVPOLAR	**00**
PIP02	PICTURE	**30**	PIP28	MAT	**01**
PIP03	TINTI	**42**	PIP29	YCOR	**01**
PIP04	COLOR	**06**	PIP30	XFREQF	**01**
PIP05	R CUTOFF	**00**	PIP31	WTCHDG	**01**
PIP06	G CUTOFF	**00**	PIP32	COLON	**00**
PIP07	B CUTOFF	**00**	PIP33	ACQNEW	**00**
PIP08	R DRIVE	**63**	PIP34	DSTDET	**01**
PIP09	G DRIVE	**65**	PIP35	CRIBEOK	**00**
PIP10	B DRIVE	**65**	PIP36	FCBEOK	**00**
PIP11	L POSI	**22**	PIP37	NOCRID	**00**
PIP12	R POSI	**15**	PIP38	NONSED	**00**
PIP13	UPR POSI	**12**	PIP39	PIP ADJ	**04**
PIP14	LWR POSI	**11**	PIP40	BRI EXT	**00**
PIP15	PICT LCK	**01**	PIP41	PCT EXT	**00**
PIP16	SELDEL	**00**	PIP42	TNT EXT	**00**
PIP17	AGCFIX	**01**	PIP43	COR EXT	**00**
PIP18	AGCADST	**00**	PIP44	R-D EXT	**00**
PIP19	AGC	**07**	PIP45	G-D EXT	**00**
PIP20	BLKINVB	**00**	PIP46	B-D EXT	**00**
PIP21	BLKINVR	**00**	PIP47	BRT COMP	**00**
PIP22	VSPDEL	**00**	PIP48	PCT COMP	**00**
PIP23	VSPISQ	**01**	PIP49	TNT COMP	**40**
PIP24	RGBIN	**00**	PIP50	COR COMP	**05**
PIP25	FRSEL	**01**	PIP51	R-D COMP	**00**
PIP26	OUTFOR	**00**	PIP52	G-D COMP	**00**
			PIP53	B-D COMP	**00**

NOTE The AV-27F703/S, AV-27F713/S model do not have PIP function, But, if memory data is out of variable range, occasionally some problems happen. Then we need to input these data.

AV-27F703
AV-27F713
AV-27F803

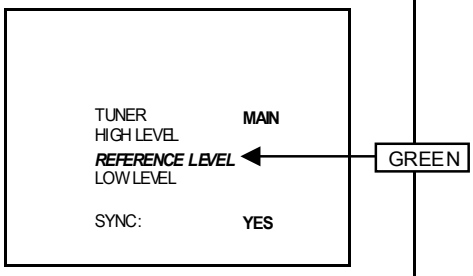
■ ADJUSTMENTS

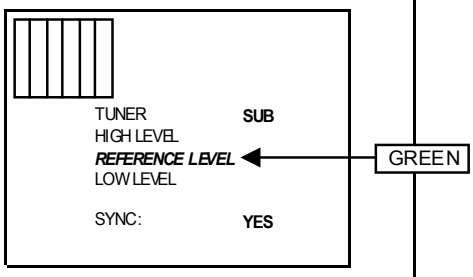
B1 POWER SUPPLY

Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 POWER SUPPLY	**DC Voltmeter**	**【B1】 Connector (pin1 & pin3)** **TP-91(pin1)** **TP-E(⏚):(pin3)**		1. Receive the black-and-white signal. (color off) 2. Connect the DC voltmeter to【B1】connector pin【1】(TP-91) and TP-E(⏚) (B1 connector pin【3】). 3. Confirm that the voltage is DC134.5V±2V.

ADJUSTMENT OF VCO

Item	Measuring instrument	Test point	Adjustment part	Description
MAIN VCO adjustment	**Signal generator**		**10:VCO MAIN** **CW TRANSF.(T111) [MAIN PWB]**	● It must not adjust without signal 1. Receive color bar signal. 2. Enter the SERVICE MENU mode. 3. Press the ▲ key, and select the 10:VCO mode from the SERVICE MENU. 4. Push the FUNCTION ◀/▶ key, and select MAIN. 5. Confirm that the color change from **HIGH LEVEL** to **LOW LEVEL** by CW TRANSF T111 at MAIN PWB, and check the **SYNC : YES**. 6. Adjust until ***REFERENCE LEVEL*** mark turns green. And then confirm that the **SYNC : YES** again. 7. Press the EXIT key to get out SERVICE MENU.
SUB VCO adjustment **(AV-27F803 ONLY)**	**Signal generator**		**10:VCO**	● It must not adjust without signal 1. Receive color bar signal. 2. Enter the SERVICE MENU mode. 1. Press the FUNCTION (▲) key, and select the 10:VCO mode from the SERVICE MENU. 4. Push the left / right (◀/▶) key, and select SUB. 5. Confirm that the change from **HIGH LEVEL** to **LOW LEVEL** by CW transformer T4111 at PIP PWB, and check the **SYNC : YES**. 6. Adjust until ***REFERENCE LEVEL*** mark turns green. And then confirm that the **SYNC : YES** again. 7. Press the EXIT key to get out SERVICE MENU screen.





ADJUSTMENT OF RF AGC

Item	Measuring instrument	Test point	Adjustment part	Description
RF. AGC adjustment			S45:AGC ADJ	1. Receive a black and white signal (color off). 2. Select **S45:AGC ADJ** of the V/C MODE. 3. Press the MUTING key and turn off color. 4. With the FUNCTION ◀ key to get the noise in the screen picture (zero side of setting value). 5. Press the FUNCTION ▶ key several times and step when noise disappears from the screen (at that time, not to increase the value too much). 6. Change to other channels and make sure that there is no irregularity. 7. Press the MUTING key and get color out.

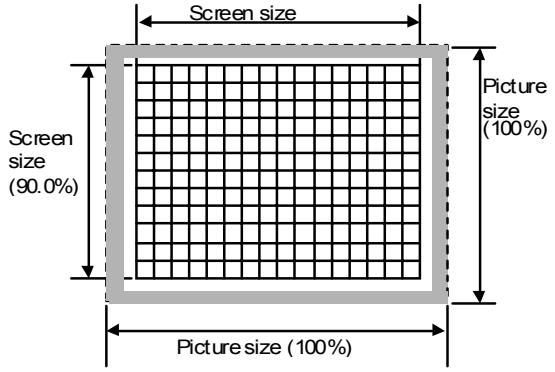
No.	Setting item	Variable range	Initial setting value
S45	AGC ADJ	0～127	63

ADJUSTMENT OF FOCUS

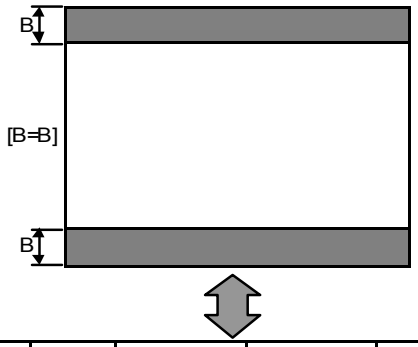
Item	Measuring instrument	Test point	Adjustment part	Description
FOCUS adjustment	Signal generator		FOCUS VR [In HVT]	1. Receive the cross-hatch signal. 2. While looking at the screen, adjust the FOCUS VR to the vertical and horizontal lines will be thinnest and sharpest center horizontal line. 3. Make sure that the picture is in focus even when the screen gets darkened.

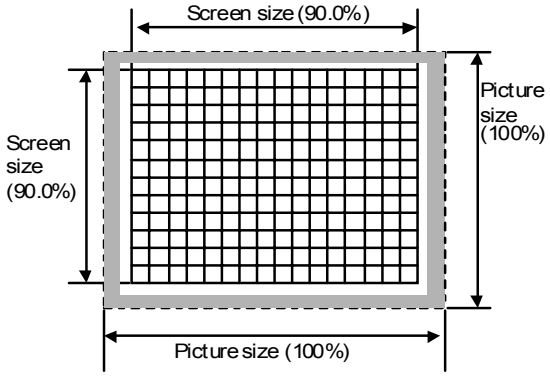
ADJUSTMENT OF DEFLECTION CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
V. HEIGHT V. CENTER adjustment (4:3)	Signal generator		D05:V PHASE D07:V SIZE V. CENTER SW (S1421) [MAIN PWB]	1. Receive the cross-hatch signal. 2. Enter the SERVICE MENU. 3. Select the **D05:V PHASE** of the 2.DEF (D) item, and it checks that the value of **D05:V PHASE** is **0**. 4. Adjust the vertical screen size of the visible screen top to 90.0% with the **D07:V SIZE** and **V CENTER SW S1421.** * Bottom is to be located with 85%～95% range. * It adjust it by DEF SERVICE **D13: V LIN.** And **D11: VS CORR.** when vertical linearity is not even.

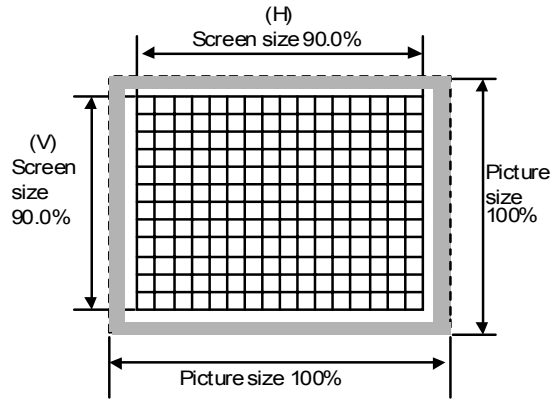


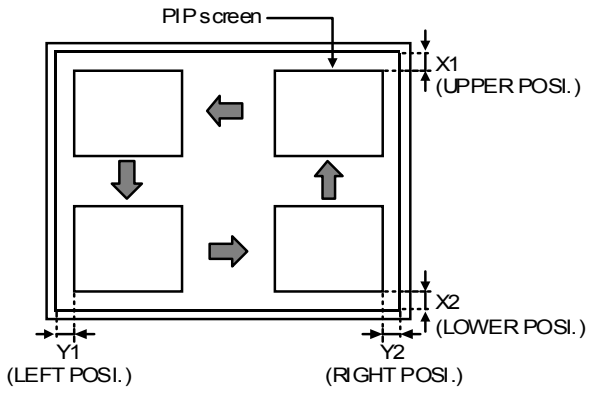
No.	Setting item	Variable range	Initial setting value
D05	V PHASE	0～7	00
D07	V SIZE	0～127	75

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>V. HEIGHT
V. LINEARITY
adjustment
(16:9)</td><td>Signal generator</td><td></td><td>D18:V. SIZE+-
D14:V. LINE+-</td><td>∗ Regular (4:3) size V. HEIGHT / V. CENTER adjustment should be finished.
1. Receive a black -and- white signal (color off).
2. Select 16:9 aspect mode with remote control unit.
3. Confirm that the width of V. BLANKING is equal to adjustment value (B).
4. If the adjustment is not correct, enter the SERVICE MENU.
5. Then adjust the D08:V. SIZE+- and D14:V. LIN+- to be same to adjustment value (B).
6. Press the EXIT key to twice to return the normal screen.
(NOTE)
∗ When you change the VERTICAL adjustment value of the regular mode (4:3), Review the adjustment of 16:9 mode again.</td></tr>
<tr><td colspan="4"> 

<table>
<tr><th>Adj. point</th><th>Item No.</th><th>Setting item</th><th>Variable range</th><th>Setting value (mm)</th></tr>
<tr><td rowspan="2">B</td><td>D08</td><td>V. SIZE+-</td><td>-128～127</td><td rowspan="2">50mm</td></tr>
<tr><td>D14</td><td>V. LIN+-</td><td>-128～127</td></tr>
</table></td></tr>
<tr><td>H. POSITION
H. SIZE &
SIDE PIN
adjustment
(4:3)</td><td>Signal generator</td><td></td><td>D03:H.POSI.
D15:H. SIZE
D23:EW PARA
D19:EW CR TOP
D21:EW CR BMT</td><td>∗ V. HEIGHT / V. POSITION adjustment should be finished.
1. Receive a cross-hatch signal.
2. Enter the SERVICE MENU.
3. Select the D03: H. POSI from 2.DEF (D) item.
4. Adjust by H. POSITION to be same size at both side.
5. Then adjust the horizontal size of the visible screen at both size to 90% with the D15:H.SIZE.
6. And adjust the vertical line at both side to become linear line by D23:EW PARA.
7. Confirm the linearity of vertical line and horizontal size/
8. If it is necessary, readjust 1.～7.
9. Press the EXIT key twice to return the normal screen.
(NOTE)
∗ If it is not straight the vertical upper and bottom corner line adjustment the upper and bottom corner pin by D19:EW CR TOP and D21:EW CR BTM.</td></tr>
<tr><td colspan="4"> 

<table>
<tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>D03</td><td>H. POSI</td><td>0～31</td><td>20</td></tr>
<tr><td>D15</td><td>H. SIZE</td><td>0～63</td><td>33</td></tr>
<tr><td>D23</td><td>EW PARA</td><td>0～63</td><td>36</td></tr>
<tr><td>D19</td><td>EW CR TOP</td><td>0～31</td><td>12</td></tr>
<tr><td>D21</td><td>EW CR BMT</td><td>0～31</td><td>14</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>H. POSITION
H. SIZE &
SIDE PIN
adjustment
(16:9)</td><td>Signal generator</td><td></td><td>D04:H.POSI+-
D16:H. SIZE+-
D20:EW CR T+-
D22:EW CR B+-
D24:EW PARA+-</td><td>∗ V. HEIGHT / V. POSITION adjustment should be finished.
∗ H. SIZE, H. POSI and SIDE PIN adjustment should be finished. (Regular size(4:3)).
1. Receive the cross-hatch signal.
2. Select 16:9 aspect mode with remote control unit.
3. Enter the SERVICE MENU.
4. Confirm both sides of cross-hatch to be the adjustment value 90%.
5. If it not correct, adjust to be value 90% at the D16:H. SIZE +- and D04:H.POSI+-.
6. Confirm the vertical 2nd line from lift and right to be straight.
7. If it is not straight, adjust to be straight at D24:EW PARA+-, D20:EW CR T+- and D22:EW CR B+-.
(NOTE)
∗ Review the adjustment of 16:9 mode again when you change the SIDE PIN adjustment value of regular (4:3) mode.</td></tr>
<tr><td colspan="4"> 

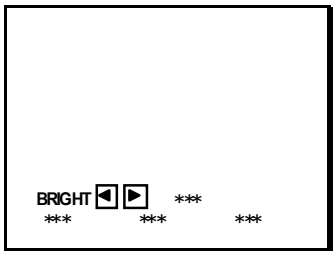
<table>
<tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Setting value</th></tr>
<tr><td>D04</td><td>H. POSI+-</td><td>-128～+127</td><td>00</td></tr>
<tr><td>D16</td><td>H. SIZE+-</td><td>-128～+127</td><td>00</td></tr>
<tr><td>D20</td><td>EW CR T+-</td><td>-128～+127</td><td>00</td></tr>
<tr><td>D22</td><td>EW CR B+-</td><td>-128～+127</td><td>00</td></tr>
<tr><td>D24</td><td>EW PARA+-</td><td>-128～+127</td><td>00</td></tr>
</table></td></tr>
<tr><td>PIP DISPLAY
POSITION
adjustment
(AV-27F803/s)</td><td>Signal generator</td><td></td><td>PIP11:L POSI.
PIP12:R POSI.
PIP13:UPR POSI.
PIP14:LWR POSI.</td><td>∗ Main picture's V. HEIGHT, V. POSI, H. SIZE, H. POSI. Should be finished.
∗ Set the VIDEO STATUS to STANDARD.
1. Receive a black-and-white signal (color off)
2. Enter the SERVICE MENU.
3. Select the 5:PIP(PIP) from SERVICE MENU.
4. Set the initial setting value of the PIP13:UPR POSI. with the (◀/▶) key of the remote control unit.
5. Adjust the PIP13:UPR POSI. so that he position of the PIP screen edge of upper will be at X1 as shown.
6. Adjust the corresponding modes of PIP14, PIP11, PIP12 with the same steps as 3～5 above.</td></tr>
<tr><td colspan="4"> 

<table>
<tr><th rowspan="2">Item No.</th><th rowspan="2">Setting item</th><th rowspan="2">Variable range</th><th rowspan="2">setting value</th><th colspan="2">Setting position</th></tr>
<tr><th>POSI.</th><th>(%)</th></tr>
<tr><td>PIP13</td><td>UPR POSI</td><td>0～127</td><td>12</td><td>X1</td><td>80</td></tr>
<tr><td>PIP14</td><td>LWR POSI</td><td>0～127</td><td>11</td><td>X2</td><td>80</td></tr>
<tr><td>PIP11</td><td>L. POSI</td><td>0～255</td><td>22</td><td>Y1</td><td>80</td></tr>
<tr><td>PIP12</td><td>R. POSI</td><td>0～255</td><td>15</td><td>Y2</td><td>80</td></tr>
</table></td></tr>
</table>

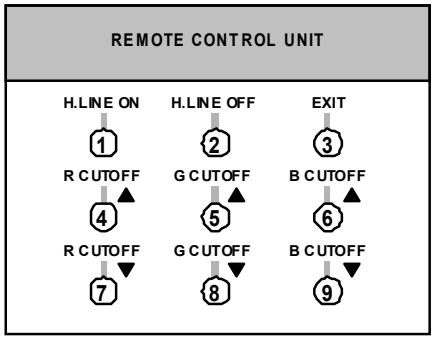
ADJUSTMENT OF VIDEO / CHROMA CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
WHITE BALANCE (Low Light) adjustment	**Signal generator**		**S01:BRIGHT** **S11:R CUTOFF** **S12:G CUTOFF** **S13:B CUTOFF** **SCREEN VR** **[in HVT]**	1. Receive the black and white signal (color off). 2. Select the **LOW LIGHT** mode from the SERVICE MENU. 3. Confirm the initial setting value of **R CUTOFF**, **G CUTOFF**, **B CUTOFF** and **BRIGHT**. 0. Display a single horizontal line by pressing the ① key of the remote control unit. 5. Turn the screen VR all the way to the left. 6. Turn the screen VR gradually to the right from the left until either one of the red, blue or green colors appears faintly. 7. Adjust the two colors which did not appear until the single horizontal line that is displayed becomes **white** using the ④ to ⑨ keys of the remote control unit. 8. Turn the screen VR until the single horizontal line is displayed faintly. 9. Press the ② key to cancel the single horizontal line mode. 10. Adjust the BRIGHT level to become the black component shines white slightly. 11. Confirm that whether the color ingredient of R, G, or B is visible to the black component, which shines white slightly 12. When the color ingredient can be seen, two colors other than a visible color are adjusted, and it is made to look white. 13. Return the value of BRIGHT to initial setting value. ●The ③ EXIT key is the cancel key for the WHITE BALANCE.

[LOW LIGHT]

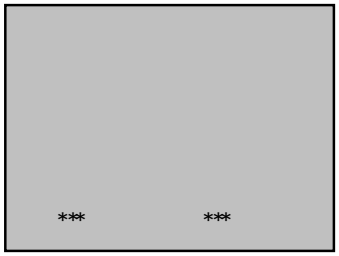


[H.LINE SCREEN]

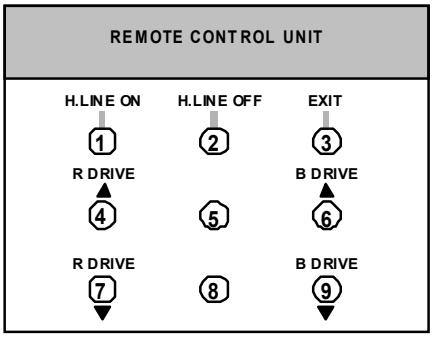


No.	Setting item	Variable range	Initial setting value
S11	**R CUT OFF**	0～255	**30**
S12	**G CUT OFF**	0～255	**30**
S13	**B CUT OFF**	0～255	**30**
S01	**BRIGHT**	0～127	**64**

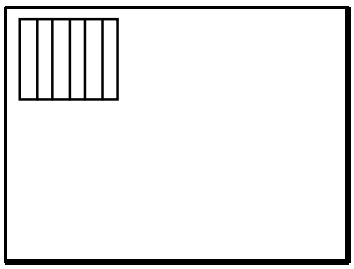
<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>WHITE BALANCE (High Light) adjustment</td><td>Signal generator</td><td></td><td>S14:R DRIVE
S15:B DRIVE</td><td>1. Receive the black-and-white signal (color off).
2. Select the HIGH LIGHT mode in the SERVICE MENU.
3. Set the initial setting value of R DRIVE and B DRIVE with the ④, ⑥, ⑦and ⑨ keys of the remote control unit.
4. Adjust the screen until it becomes white using the ④, ⑥, ⑦ and ⑨ keys of the remote control unit.
●The ③ EXIT key is the cancel key for the WHITE BALANCE.

[WHITE SCREEN]

<table><tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>S14</td><td>R DRIVE</td><td>0～127</td><td>64</td></tr><tr><td>S15</td><td>B DRIVE</td><td>0～127</td><td>64</td></tr></table></td></tr>
<tr><td>PIP WHITE BALANCE (High Light) adjustment
(AV-27F803 ONLY)</td><td>Signal generator</td><td></td><td>PIP08:R DRIVE
PIP10:B DRIVE</td><td>1. Receive the black-and-white signal (color off).
2. Select the PIP08:R DRIVE, PIP10:B DRIVE, of the 5.PIP(PIP) SERVICE MENU.
3. Set the corresponding initial setting values with the FUNCTION (◀/▶) key of the remote control unit.
4. Adjust the PIP08:R DRIVE, PIP10:B DRIVE until the screen becomes white.

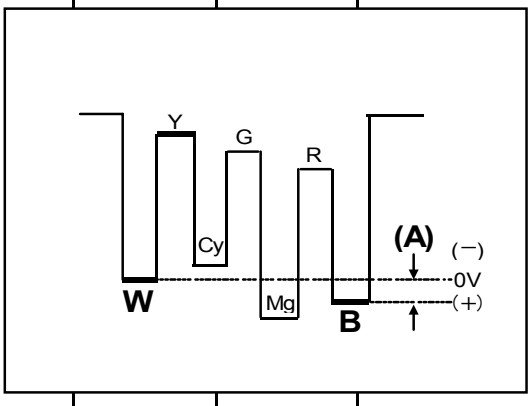
 

<table><tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>PIP08</td><td>R DRIVE</td><td>0～255</td><td>63</td></tr><tr><td>PIP10</td><td>B DRIVE</td><td>0～255</td><td>65</td></tr></table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>SUB BRIGHT adjustment</td><td></td><td></td><td>S01:BRIGHT</td><td>1. Receive the broadcast and set the STANDARD mode.
2. Enter the SERVICE MENU.
3. Select S01:BRIGHT of the V/C(S) mode.
4. Set the initial setting value of the S01. BRIGHT with the FUNCTION ◀/▶ key.
5. If the brightness is not the best with the initial setting value, make fine adjustment of the S01. BRIGHT until you get the optimum brightness.</td></tr>
<tr><td colspan="4"><table><tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>S01</td><td>BRIGHT</td><td>0～127</td><td>64</td></tr></table></td></tr>
<tr><td>SUB CONTRAST adjustment</td><td></td><td></td><td>S02:PICTURE</td><td>1. Receive the broadcast and set the STANDARD mode.
2. Enter the SERVICE MENU.
3. Select S02:PICTURE of the V/C(S) mode.
4. Set the initial setting value of the S02:PICTURE with the FUNCTION ◀/▶ key.
5. If the contrast is not the best with the initial setting value, make fine adjustment of the S02:PICTURE until you get the optimum contrast.</td></tr>
<tr><td colspan="4"><table><tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>S02</td><td>PICTURE</td><td>0～127</td><td>60</td></tr></table></td></tr>
<tr><td>SUB COLOR adjustment</td><td>Signal generator

Remote control unit</td><td></td><td>S03:COLOR</td><td>[Method of adjustment without measuring instrument]
1. Receive the broadcast.
2. Enter the SERVICE MENU.
3. Select S03:COLOR of the V/C(S) mode.
4. Set the initial setting value of the S03:COLOR with the FUNCTION ◀/▶ key.
5. If the color is not the best with the Initial setting value, make fine adjustment of the S03:COLOR until you get the optimum color.</td></tr>
<tr><td colspan="4"><table><tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>S03</td><td>COLOR</td><td>0～127</td><td>50</td></tr></table></td></tr>
<tr><td></td><td>Signal generator

Oscilloscope

Remote control unit</td><td>TP-B
TP-E(⏚)
[CRT SOCKET PWB]</td><td>S03:COLOR</td><td>[Method of adjustment using measuring instrument]
1. Input the full field color bar signal (75% white).
2. Enter the SERVICE MENU.
3. Set the RFAFC to OFF.
4. Select S03:COLOR of the V/C(S) mode.
5. Set the initial setting value of the S03:COLOR with the FUNCTION ◀/▶ key.
6. Connect the oscilloscope between TP-B and TP-E.
7. Adjust COLOR and bring the value of (A) in the illustration to the voltage shown in the table bellow.
8. Reset the RFAFC setting position from OFF to ON.</td></tr>
<tr><td colspan="4"> 
</td></tr>
<tr><td colspan="4"><table><tr><th>Models \ W-B</th><th>[A]Voltage</th></tr><tr><td>AV-27F703/S
AV-27F713/S
AV-27F803/S</td><td>+13V</td></tr></table></td></tr>
</table>

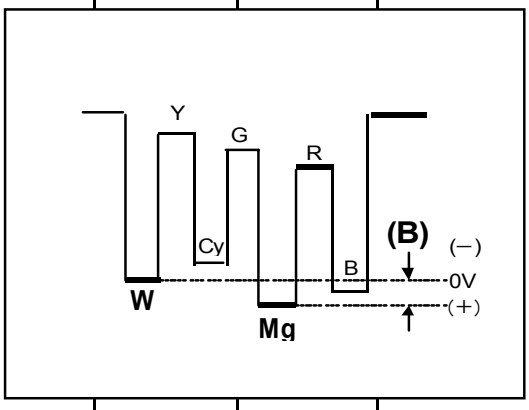
<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td rowspan="2">SUB TINT adjustment</td><td>Signal generator

Remote control unit</td><td></td><td>S04:TINT</td><td>[Method of adjustment without measuring instrument]
1. Receive the broadcast.
2. Enter the SERVICE MENU.
3. Select S04:TINT of the V/C(S) mode.
4. Set the initial setting value of the S04:TINT with the FUNCTION ◀/▶ key.
5. If the tint is not the best with the initial setting value, make fine adjustment of the S04:TINT until you get the optimum tint.

<table><tr><th>No.</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>S04</td><td>TINT</td><td>0～127</td><td>68</td></tr></table></td></tr>
<tr><td>Signal generator

Oscilloscope

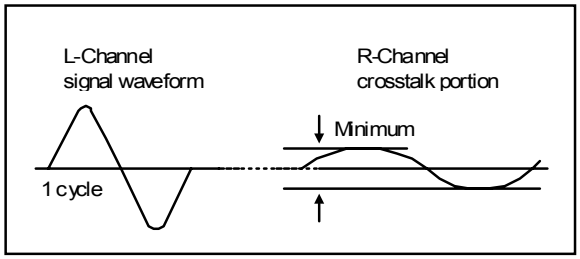
Remote control unit</td><td>TP-B
TP-E(⏚)
[CRT SOCKET PWB]</td><td>S04:TINT</td><td>[Method of adjustment using measuring instrument]
1. Input the full field color bar signal (75% white).
2. Enter the SERVICE MENU.
3. Set the RFAFC to OFF.
4. Select S04:TINT of the V/C(S) mode.
5. Set the initial setting value of the S04:TINT with the FUNCTION ◀/▶ key.
6. Connect the oscilloscope between TP-B and TP-E.
7. Adjust TINT and bring the value of (B) in the illustration to the voltage shown in the table bellow.
8. Reset the RFAFC setting position from OFF to ON.

<table><tr><th>W-Mg / Models</th><th>[B]Voltage</th></tr><tr><td>AV-27F703/S
AV-27F713/S
AV-27F803/S</td><td>+26V</td></tr></table></td></tr>
</table>

ADJUSTMENT OF MTS CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
MTS INPUT LEVEL Adjustment	**Sophometer**	**AUDIO OUT R pin**	**A01:IN LEVEL**	1. Receive the cross-hatch signal (cross-hatch / 400Hz) 2. Enter the SERVICE MENU. 3. Select the **A01:IN LEVEL** of the 3:SOUND(A) MODE. 4. Verify that the **A01:IN LEVEL** is set at its initial setting value. 5. Connect the sophometer to AUDIO OUT R pin. 6. Adjust the MTS input level to 500mV(rms) by **A01:IN LEVEL** with remote control unit. 7. Press the EXIT key to return to the SERVICE MENU screen. **No.** / **Setting item** / **Variable range** / **Initial setting value** **A01** / **IN LEVEL** / 0～15 / **010**
MTS SEPARATION adjustment	**TV audio multiplex signal generator** **Oscilloscope**	**R OUT** **L OUT** **[AUDIO OUT]**	**A02:LOW SEP.** **A03:HI SEP.**	1. Input the stereo L signal (300Hz) from the TV audio multiplex signal generator to the antenna terminal. 2. Connect an oscilloscope to **R OUT** pin of the AUDIO OUT, and display one cycle portion of the 300Hz signal. 3. Enter the SERVICE MENU. 4. Select the **A02:LOW SEP.** of the 3:SOUND(A) mode. 5. Set the initial setting value of the **A02:LOW SEP.** with the FUNCTION (◀/▶) key. 6. Adjust the **A02:LOW SEP.** so that the stroke element of the 300Hz signal will become minimum. 7. Change the connection of the oscilloscope to **L OUT** pin of the AUDIO OUT, and enlarge the voltage axis. 8. Change the signal to 3kHz, and similarly adjust the **A03:HI SEP.** 9. Press the EXIT key to return to the SERVICE MENU screen. **No.** / **Setting item** / **Variable range** / **Initial setting value** **A02** / **LOW SEP.** / 0～63 / **032** **A03** / **HI SEP.** / 0～63 / **032**



HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

1. HIGH VOLTAGE HOLD DOWN CIRCUIT

After repairing the high voltage hold down circuit shown in Fig. 1.
This circuit shall be checked to operate correctly.

2. CHECKING OF THE HIGH VOLTAGE HOLD DOWN CIRCUIT

(1) Turn the power switch to on.

(2) As shown in Fig. 1, set the resistor between S1 connector 2 and 3 .

(3) Make sure that the screen picture disappears.

(4) Temporarily unplug the power plug.

(5) Remove the resistor replaced S1 connector 2 and 3 .

(6) Again plug the power plug, make sure that the normal picture is displayed on the screen.

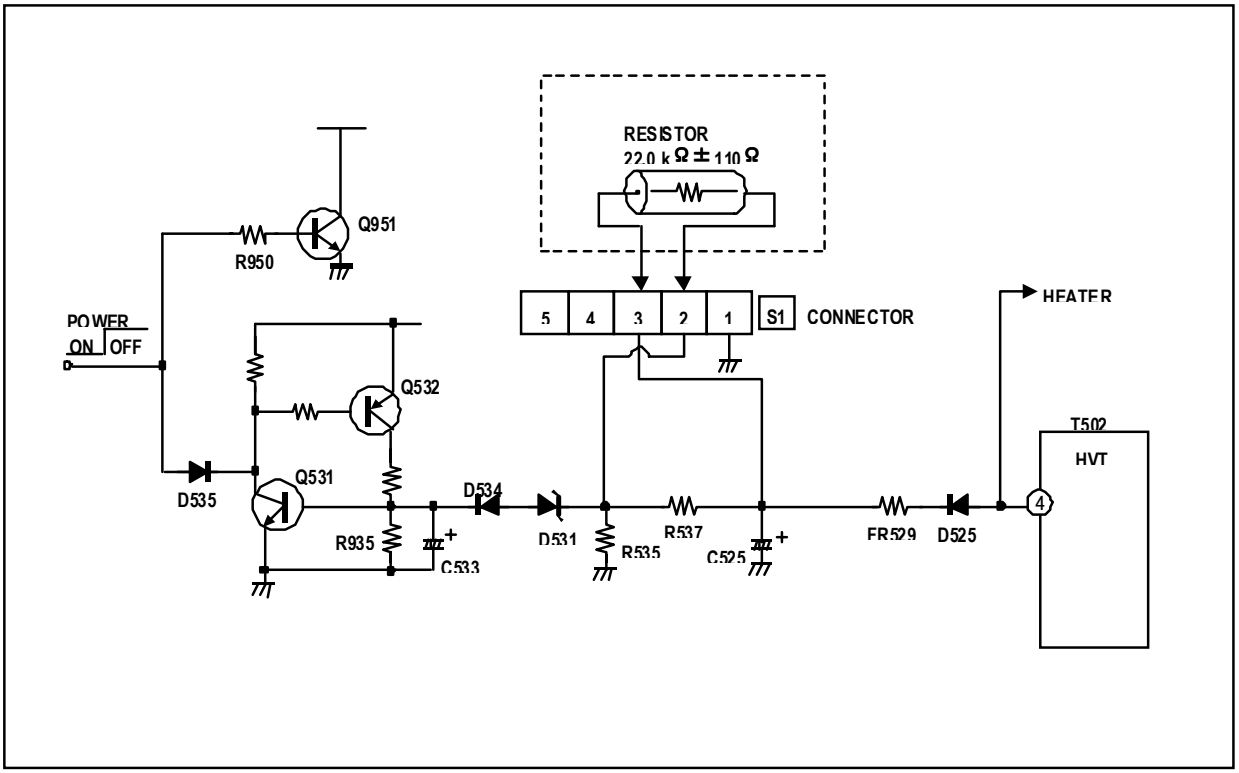


Fig. 1

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

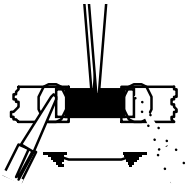
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

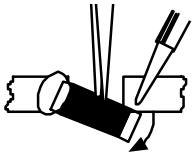
1. How to remove Chip parts

◆ **Resistors, capacitors, etc**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

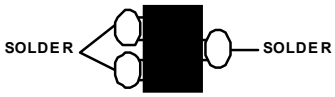


(2) Shift with tweezers and remove the chip part.

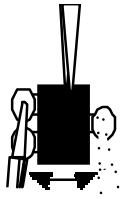


◆ **Transistors, diodes, variable resistors, etc**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

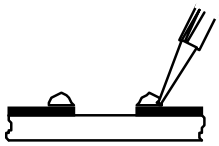


Note : After removing the part, remove remaining solder from the pattern.

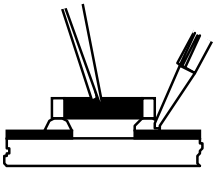
2. How to install Chip parts

◆ **Resistors, capacitors, etc**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

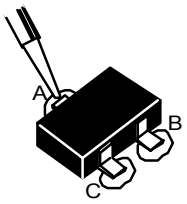


◆ **Transistors, diodes, variable resistors, etc**

(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.